

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
AMENDMENT OF PART 15 REGARDING)	ET Docket No. 04-37
NEW REQUIREMENTS AND)	
MEASUREMENT GUIDELINES FOR)	
ACCESS BROADBAND OVER POWER)	
LINE SYSTEMS)	

To: The Commission

**REPLY TO OPPOSITION TO PETITION FOR ISSUANCE OF
FURTHER NOTICE OF PROPOSED RULE MAKING AND
FOR AMENDMENT OF REGULATIONS**

ARRL, the National Association for Amateur Radio (“ARRL”; also known as the American Radio Relay League, Incorporated), by counsel, hereby respectfully submits its reply to the pleading styled *Opposition and Motion for Summary Dismissal of Petition For Issuance of Further Rulemaking* (sic) (the “Opposition”) filed in this proceeding by the United Power Line Council (UPLC) on or about November 2, 2005. UPLC opposes, and seeks “summary dismissal,” of ARRL’s *Petition For Issuance Of Further Notice Of Proposed Rule Making And For Amendment Of Regulations*, filed October 18, 2005 (the “Petition”). In view of technical advancements in Access Broadband over Power Line (BPL) technology, and based on extensive field tests, measurements and experience with BPL technology, the ARRL Petition proposed amendment of certain of the Commission’s Part 15 rules, including Sections 15.601 *et seq.* (Subpart G), to address satisfactorily the serious interference potential of certain access BPL systems to licensed radio services,

fixed and mobile. For its reply to UPLC's Opposition, and in further support of its Petition, ARRL states as follows:

1. As a general observation, it is difficult to understand the rationale for UPLC's knee-jerk response to ARRL's Petition. On its face, the Petition does no more than to state a reasonable basis for a principled accommodation for all concerned with, or about, access BPL. This would include BPL operators. Understandably, UPLC would like to see the fewest restrictions on access BPL that it can obtain from the Commission. Its opposition to the ARRL Petition is, however, short-sighted. UPLC cannot in good faith allege that the present rules enacted in this proceeding are in any sense sufficient to prevent or mitigate interference to Amateur Radio operators. They are not sufficient, as has been demonstrated time and time again in BPL test deployments. Most of the regulations adopted by the Commission for access BPL do not even apply to the interaction between access BPL systems and Amateur Radio stations. The record in this proceeding is painfully clear on that subject. However, there is a marked contrast in interference potential between the BPL systems that currently comply with the few additional rules proposed in the ARRL Petition, and those that do not. This difference makes the ARRL Petition such an obvious benefit to the fledgling BPL industry, and to the licensed radio services that the additional rules would protect, as to make UPLC's Opposition contrary to its own members' interests. UPLC cannot want to expose BPL operators to either ongoing regulatory uncertainty, or the inevitable avalanche of interference complaints that will follow deployment of BPL systems that do not meet the few additional provisions suggested in the ARRL Petition. The Petition offers a means of avoiding both of those consequences, and it would permit a reasonably acceptable RF

environment. The rules established by the *Report and Order* in this proceeding [“Carrier Current Systems, including Broadband over Power Line Systems,” *Report and Order*, ET Docket No. 04-37, 19 F.C.C.R. 21,265 (“*Report and Order*”)] do not accomplish either goal. UPLC would better serve its members by embracing the ARRL Petition, rather than rejecting it.

2. UPLC alleges in its Opposition (which itself is an unauthorized pleading ¹) that the Petition is nothing more than a late-filed Petition for Reconsideration. Not so. The *Report and Order* in this proceeding established certain rules for operation of Access BPL systems. Those rules have not been stayed, and are now in effect. Surely enough, the rules are subject to some seventeen Petitions for Reconsideration, including one filed by ARRL. The Petition is not either a separate Petition for Reconsideration nor a Supplement to the pending one. It legitimately seeks to create additional rules which, together with those established by the *Report and Order*, will be sufficient to allow ARRL to withdraw its pending Petition for Reconsideration. ARRL, and any other interested person, is entitled at any time to petition for the issuance, amendment, or repeal of a rule or regulation by the filing of a petition for rulemaking.² The ARRL Petition was filed almost exactly a year after the release of the *Report and Order*. That hardly makes the Petition “premature” as it is characterized by UPLC. Had there been no test deployments of BPL; no experience with the interference potential of those test deployments; and had there been no recent tests of the Motorola or Current Technologies BPL systems, perhaps the additional rules to prevent interference proposed in the ARRL Petition would have been premature. Under the circumstances, however, the last clear

¹ The Commission has not yet placed the ARRL Petition on public notice, nor sought comment on it. See Section 1.405 of the Commission’s rules.

² See, Section 1.401(a) of the Commission’s rules.

chance to avoid extensive deployment of BPL systems which do not presently comply with the additional rules proposed in the ARRL Petition, and the last clear chance to prevent substantial interference from BPL deployments, is right now. The ARRL Petition is timely, and urgent, in order to avoid severe, widespread incidents of interference to Amateur Radio operations from BPL deployments. The proposed additional operating requirements will accomplish that.³

3. UPLC cites Section 1.401(e) of the Commission's rules, which provides for the dismissal of petitions for rulemaking under certain conditions, to-wit: petitions which are moot, premature, repetitive, frivolous, or which plainly do not warrant consideration. Of these conditions, UPLC argues only that the proposed rules in the ARRL petition are "premature". That argument is rebutted above. Obviously, the ARRL Petition does not fall within any of those other categories either. The Petition should receive notice and comment without delay. Because the BPL rules are now in place; because those rules are insufficient to prevent harmful interference; because potential BPL operators deserve the opportunity to provide broadband service without unnecessary regulatory uncertainty; and because BPL customers deserve broadband service that is not subject to being shut down due to preventable interference incidents. UPLC suggests alternatively that the ARRL Petition should be dismissed because it "challenges rules that have not been given a chance to work." However, looking at the matter in the proper perspective, the new rules, to the small extent that they even apply to Amateur Radio interference, have had a

³ UPLC claims that the instant proceeding is still "underway." That is somewhat misleading; the rules created by the *Report and Order* are effective and in place. Access BPL systems which comply with the current rules but which create substantial, ongoing interference to Amateur Radio stations are now being constructed and operated. If UPLC was advocating a freeze on BPL system deployment pending resolution of the Petitions for Reconsideration, it might have a point. As it stands, the timeliness of ARRL's Petition, before substantial deployment of BPL systems has occurred, is indisputable.

chance to fail, and the systems which are presently configured without the conditions ARRL seeks to add to the regulations have done so, every time. ARRL's Petition, of course, seeks to structure BPL regulations which have a "chance to work," and which do not necessitate major reengineering of existing technology in order to comply.

4. ARRL's Petition does not "challenge" the FCC rules adopted in the *Report and Order*, with one exception. ARRL's Petition proposes no deletion of existing rules. Rather, it seeks to add two provisions to them. As to the distance extrapolation factor for signal strength measurement, the 40 dB per decade of distance factor is and has simply been wrong as a technical matter, and the ARRL Petition seeks to correct it. The Commission, at paragraph 20 of the *Report and Order*, stated an intention to revisit the matter at a later date, based on additional evidence.⁴ ARRL has provided that new information, both in its Petition for Reconsideration and in its Citation of Additional Authority filed July 8, 2005. UPLC states that the interference protections sought to be added were explicitly rejected by the Commission a year ago in the *Report and Order*. Experience since then, however, has provided evidence that an accommodation for all parties can be reached by the addition of the rules proposed in the ARRL Petition. There have been advancements in BPL technology since the issuance of the *Report and Order*, as is evident from the Motorola BPL system. There has also been considerable additional experience with BPL systems, including the Current Technologies system. There is ample evidentiary basis for a change in the BPL rules.

⁴ At paragraph 109 of the *Report and Order*, the Commission stated that, given the "lack of conclusive experimental data pending large scale Access BPL deployments," it would continue the use of the existing Part 15 distance extrapolation factors in its rules. but with slant range rather than horizontal distance. However, it stated that "[i]f new information becomes available that alternative emission limit/distance standards or extrapolation factors would be more appropriate, we will revisit this issue at another time."

5. Notably absent from the UPLC Opposition is any assertion, much less any evidence, that the new rules proposed by ARRL in its Petition are in any manner impossible of compliance by BPL manufacturers or operators, or that they constitute an unreasonable burden.⁵ ARRL assumes that, upon adoption of these additional rules, BPL equipment manufacturers and service providers other than those several companies already meeting the criteria, will reconfigure the architecture of their systems to permit them to compete with the companies already meeting the specifications. ARRL believes that all present BPL architectures will be able, after a reasonable transition period, to meet the proposed additional BPL rules, and that none of the additional requirements would necessitate extensive system redesign, save for the need for additional filtering. The new rules are not a substantial burden on system manufacturers or operators. Current Technologies, Motorola, IBEC and Corridor Systems all avoid use of Amateur allocations as a matter of design, and all DS2 and other BPL systems are capable of implementing such a requirement.

6. UPLC suggests that the ARRL Petition seeks to “dictate technology approaches.” Not so. The Commission is not being asked to dictate what access BPL technology is used. The conditions sought to be added to the existing rules merely impose the minimum necessary technical standards to make it probable that a BPL system will not cause harmful interference to licensed services. It is not prevented now, as any reasonable review of the BPL test sites reveals. UPLC’s statements that the *Report*

⁵ UPLC does state in its conclusion that “changing the rules in midstream would have a profoundly negative effect on the deployment of BPL systems and the evolution of BPL technology. “ It is not explained by UPLC what those profound negative effects would be, or why interference prevention is not a benefit to BPL operators. ARRL is of the view that the additional rules will provide BPL operators a chance to implement systems which do not have an overwhelming interference potential, and which are not therefore subject to the obligation to terminate their operation until those interference complaints are resolved. Furthermore, the additional rules proposed by ARRL do not require substantial redesign or reengineering of the BPL systems by manufacturers.

and Order “establishes safeguards that require BPL operators to mitigate interference” and that “BPL operators that use the HF band (sic) on medium-voltage lines have been very effective in mitigating rare (sic) instances of interference to Amateur radio users” (sic) are pure sophistry. As its sole authority for its absurd and false claim that BPL operators have been successful in resolving interference cases (other than by shutting down the BPL system, which has thus far been the only reliable means of interference resolution) UPLC cites (UPLC Opposition, Footnotes 9 and 12) a letter from Bruce Franca, then Deputy Chief, OET, to Thomas A. Brown dated July 22, 2004, claiming that the Raleigh, North Carolina BPL test system was “in compliance with the FCC rules and the measures used to notch frequencies used by the Amateur Radio Service were effective.” UPLC fails to mention two important facts about the Raleigh BPL system. One is that the interference from that system to numerous Amateur Radio operators persisted, and was not resolved until the system was shut down. The other is that the Franca letter was rebutted by ARRL in a response sent by letter from ARRL Chief Executive Officer David Sumner *the very same day* as the Franca letter cited by UPLC. ARRL’s rebuttal noted the substantial errors in the Commission’s assumptions, methodologies, and most importantly, its conclusions. A copy of the ARRL letter is attached hereto as Exhibit A. Though ARRL was repeatedly promised a response to that letter, none has been forthcoming in the intervening year and four months since it was issued. The last paragraph of Mr. Sumner’s letter to Mr. Franca about the Raleigh system stated as follows:

Until these points can be clarified, we trust that the Commission will not permit its conclusions to be erroneously represented as having given the Progress Energy trials a “clean bill of health.” As noted above, as of today the harmful interference is far from resolved.

Unfortunately, the Commission's lack of response to ARRL's correspondence has resulted in UPLC's erroneous representation that a BPL interference complaint has been resolved by the BPL operator: exactly that which ARRL asked that the Commission prevent. The silence of the Commission in this instance is consistent with the Commission's non-responses to BPL interference complaints generally, which continue to the present time. *The fact is that UPLC cannot cite one single instance of satisfactory and timely resolution of harmful interference from BPL systems, except those systems in, for example, Raleigh, North Carolina, Cedar Rapids, Iowa, Allentown, Pennsylvania, Burnet, Texas, Irving, Texas and Penn Yan, New York, where the systems were simply shut down instead.* UPLC's allegation that the additional few rules proposed in the Petition are somehow unnecessary is not well-taken.

7. UPLC concludes by stating that the only value of the ARRL Petition is "its express acknowledgement that BPL systems can and do coexist with Amateur operations." Because that is an inaccurate recitation of ARRL's position, apparently UPLC has misread ARRL's Petition. ARRL asserted that *some* BPL systems, specifically those (and only those) which meet the technical operating conditions specified in ARRL's Petition, present manageable interference potential, such that it can be dealt with on a case-by-case basis. ARRL has provided the BPL industry and the Commission an opportunity to create an RF environment which is not substantially degraded for licensed radio services and which permits access BPL to develop without the competitive handicap of fundamental incompatibility with licensed services. In order to represent the best interests of its members, UPLC should endorse the ARRL Petition. The Commission should proceed expeditiously to issue a further Notice of Proposed Rule Making, adopt

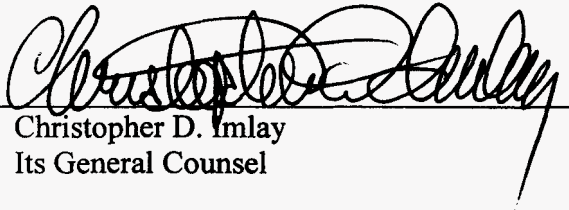
the proposed rules, and remove the obstacles to a responsible rollout of access BPL that were either created, or not resolved, by the *Report and Order*.

Therefore, the foregoing considered, ARRL, the National Association for Amateur Radio, again respectfully requests that the Commission issue a Further Notice of Proposed Rule Making in this proceeding, incorporating the additional and amended rules set forth in the ARRL Petition.

Respectfully submitted,

**ARRL, THE NATIONAL ASSOCIATION FOR
AMATEUR RADIO**

By: _____



Christopher D. Imlay
Its General Counsel

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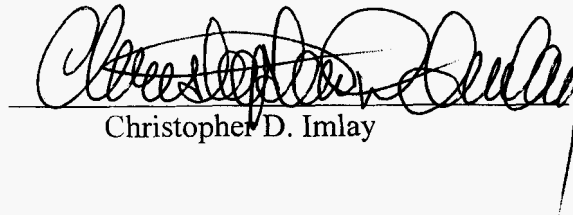
November 21, 2005

CERTIFICATE OF SERVICE

I, Christopher D. Imlay, do hereby certify that I caused to be mailed, via first class U.S. Mail, postage prepaid, a copy of the foregoing REPLY TO OPPOSITION TO PETITION FOR ISSUANCE OF FURTHER NOTICE OF PROPOSED RULE MAKING AND FOR AMENDMENT OF REGULATIONS to the following, this 21st day of November, 2005.

UPLC

Brett Kilbourne, Esq., Director of
Regulatory Services and Associate Counsel
1901 Pennsylvania Avenue, N.W., 5th Floor
Washington, D.C. 20006



Christopher D. Imlay

SECRET A



ARRL *The national association for*
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QST
OFFICIAL JOURNAL

July 22, 2004

Mr. Bruce A. Franca, Deputy Chief
Office of Engineering and Technology
Federal Communications Commission
445 12th St. SW
Washington DC 20554

Dear Mr. Franca:

Thank you for providing a copy of your letter of today's date to Thomas A. Brown. We appreciate the Commission's efforts to address the harmful interference, reported to you nearly three months ago, arising from the Progress Energy trials in Southern Wake County, North Carolina.

We are encouraged to note your acknowledgment that the FCC Part 15 limits in and of themselves are not sufficient to protect radiocommunication services from harmful interference. However, we must also note that the 24-dB reduction mentioned in your letter would not be sufficient to eliminate harmful interference in many cases, and indeed has not been sufficient in the present case as will be seen below. The operator of a Part 15 device must eliminate all harmful interference, and therefore in some cases must achieve more – in certain cases, considerably more – than a 24-dB reduction in order to be in compliance.

It is not at all clear that the tests and measurements taken by the FCC during the period June 28 to July 2 established the absence of harmful interference to licensed stations. We would appreciate your making the test report that formed the basis for the conclusions set out in your brief letter available to the general public. In any event the ARRL requests a copy for technical review and comment, as well as a description and timing of the specific steps taken by Progress Energy between April 27 and June 28 to address the interference complaints.

From consulting with the amateurs who have been and continue to be receiving harmful interference from the Progress Energy trials, we find that while the interference has been reduced (but not eliminated) in some parts of the amateur bands it continues unabated in others. Specifically, on July 17, 2004 and again today, at the Holland Church Road site the BPL signal was at full strength and causing harmful interference in the band 14.290-14.350 MHz. This frequency range is used by a number of amateur networks associated with emergency and disaster communications and is important to mobile as well as to fixed station operators. Harmful interference was also present in the band 21.000-21.100 MHz. The frequencies of 15.000 and 20.000 MHz used by the standard time and frequency stations WWV and WWVH were obliterated, as were several international broadcasting bands. Even in the notched bands, the interference was still evident on ordinary amateur equipment. Therefore, your earlier

AMERICAN RADIO RELAY LEAGUE

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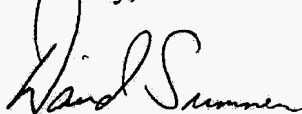
measurements and observations notwithstanding, it is clear that as of today the Holland Church Road site is in violation of §15.5(b). No doubt you will be receiving additional reports from amateurs in the area until the interference is finally eliminated.

We also request clarification on certain aspects of the testing and measurements described, to wit:

1. In the third paragraph you say that a "high quality amateur receiver" was used to "show little field strength or observable signal levels in the notched bands." Was the antenna used one that typically would be used in an amateur station? If a smaller or less efficient antenna were used, this would result in an underreporting of signal levels. Please identify the receiver and its owner, its measured sensitivity, and describe the antenna used.
2. In the course of their observations did FCC personnel note the extent of interference to other radiocommunication services commonly used by consumers, such as shortwave broadcasting and standard time and frequency stations?
3. In the fifth paragraph you describe measurements and observations taken at two fixed amateur locations. Were observations made using the complainants' equipment and antennas to confirm the absence of interference to their stations? If not, we respectfully submit that no conclusions can be drawn as to the interference condition in these locations. Antennas used for standard measurement have far less gain than even a modest amateur antenna.
4. Your letter also notes that measurements and observations could not be made at a third site "due to a GPS mapping error and subsequent time constraints." On what basis have you concluded that there is no harmful interference to the station at this location?
5. We assume that in the normal course of your extensive investigation over a five-day period, the complainants were given the opportunity to demonstrate to FCC personnel the interference they were encountering at their licensed stations. What were the results of those demonstrations? Did the complainants confirm that the interference that gave rise to their complaints had been eliminated?

Until these points can be clarified, we trust that the Commission will not permit its conclusions to be erroneously represented as having given the Progress Energy trials a "clean bill of health." As noted above, as of today the harmful interference is far from resolved.

Sincerely,



David Sumner
Chief Executive Officer

cc: Thomas A. Brown, N4TAB
George Dillon, FCC/EB
Riley Hollingsworth, FCC/EB
Len Anthony, Progress Energy Corporation
Matt Oja, Progress Energy Corporation
Bill Godwin, Progress Energy Corporation
Chris Imlay, General Counsel, ARRL
Jim Haynie, President, ARRL